

5 **METHOD AND SYSTEM FOR CONTROLLING THE PRESENCE OF FLUORINE
IN REFRACTORY METAL LAYERS**

ABSTRACT OF THE DISCLOSURE

A method and system to reduce the resistance of refractory metal layers by controlling the presence of fluorine contained therein. The present invention is based upon the discovery that when employing ALD techniques to form refractory metal layers on a substrate, the carrier gas employed impacts the presence of fluorine in the resulting layer. As a result, the method features chemisorbing, onto the substrate, alternating monolayers of a first compound and a second compound, with the second compound having fluorine atoms associated therewith, with each of the first and second compounds being introduced into the processing chamber along with a carrier gas to control a quantity of the fluorine atoms associated with the monolayer of the second compound.

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